DOCUMENT RESUME

ED 257 178 EA 017 719

AUTHOR Trider, Donald M.; And Others
TITLE Exploring the Causes of Principal Behavior.
PUB DATE 85
NOTE 57p.; Paper presented at the Annual Meeting of the American Educational Research Association (Chicago, IL, March 31-April 4, 1985).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Administrative Problems; Administrator Attitudes; Administrator Role; *Behavior; Educational Change; Elementary Secondary Education; *Influences; *Leadership Styles; Predictor Variables; *Principals; Research Needs

ABSTRACT

Principals exhibiting different kinds of administrative behavior tend to be influenced by different kinds of factors, according to the results of two sets of related studies reported in this document. The first set, consisting of three studies of principals and central administrators, explored the factors shaping principals' behaviors when the principals were confronted with obstacles to the growth of their own effectiveness. Factors associated with the central administration and with principals' own skills were most consistently identified as obstacles, but the study design did not permit conclusive identification of the variables affecting principal behavior in response to these obstacles. The second set of studies, reported in greater detail, examined factors principals believed influenced their behavior while performing in a specific task environment--in this case, while implementing policies for special education. The most critical factors found were the principals' personal experiences and beliefs. Among the variables affecting the extent to which given factors influenced principals were the condition of the factor, the stage in the implementation process, and the principal's specialized training. Study data were obtained by questionnaire and interview. Areas for further research are suggested on several occasions. A 37-item reference list concludes the report. (PGD)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ERIC

ED257178

U.S. DEPARTMENT OF EDUCATION
NATIONAL INSTITUTE OF EDUCATION
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☒ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official NIE position or policy.

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

Donald M. A. Trider

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

Exploring The Causes of Principal Behavior

Donald M. Trider, Kenneth A. Leithwood, Deborah J. Montgomery

The Ontario Institute for Studies in Education

Paper Presented at the Annual Meeting of the

American Educational Research Association

Chicago, Illinois March 31 - April 4, 1985

EA 017 719

EXPLORING THE CAUSES OF PRINCIPAL BEHAVIOR

Four sets of questions have dominated empirical research on the principals' role over the past ten years. "What is it that principals do?" has driven much of this research. Results of research focused on this question describing the behaviors of both typical[1] and highly effective principals[2]. Alternative styles of principal behavior[3] and patterns of growth in principal effectiveness[4] have also been suggested.

"What effect do principals have on schools, especially the outcomes achieved by students?", has guided the second largest group of studies about principals. Results of these studies, of which there are at least forty[5], suggest wide variation in effects depending on the nature of principal behavior. "Effective" behaviors have been positively related to six types of school effects. Three of these effect or outcome types concern students directly: attitudes toward school, basic skills and such "other" behaviors as attendance and vandalism. Each of the three remaining types of outcomes, on which principals have been shown to have a demonstratable effect; concern teachers: their adoption and use of innovative classroom practices, job attitudes and perceptions of the principal's leadership.

Principals' influence on schools, while potentially significant, is often quite indirect. Understanding how principals influence schools depends on knowledge about those factors which mediate principals' behavior. Through what

BEST COPY AVAILABLE

mechanisms is the principal's influence transmitted?, while a critical third question, has been the focus of a relatively small amount of research. Results of this research are exemplified in reports from the Instructional Management Program of the Far West Laboratory for Educational Research and Development[6] identifying five elements of school climate and six elements of instructional organization and practice. An overlapping but more extensive set of mediating variables has been identified in our own research[7]; these include some ten classroom variables and seven non-classroom, school variables through which principals' influence is transmitted.

A fourth set of questions included in recent research on the principals' role concerns factors influencing principals behavior. Relatively little research has been undertaken to identify these factors and to understand the nature of their effect. Yet much of the other research activity to which we have alluded had as its long-term purpose increasing the success of school improvement efforts by helping principals contribute more effectively to those efforts. Realizing this objective seems unlikely, however, in the absence of better understanding the causes of principal behavior. Of the four sets of research questions, this is, arguably, the one most in need of further attention: it is the question to which this paper is devoted.

For the past five years, we have been engaged in a research program pursuing all four sets of questions discussed above. As part of this program, a series of studies designed

to identify factors shaping principals' behavior have been completed. These studies have approached the problem from two different perspectives. In this paper we summarize three studies undertaken within one such perspective, a perspective concerned with "obstacles" inhibiting growth in principal effectiveness. We also report, in more detail, 2 studies which examined factors influencing principals' behavior in a more specific task environment, the implementation of a major policy regarding special education.

General Framework

Our research program, as a whole, has been explicitly guided by a framework implicit in the four research questions examined by way of introduction[8]. (Dwyer et al (1983) have developed, independently, a very similar framework to guide their research.) Figure 1 summarizes the framework: "short-hand" designations for the results of our research concerning the nature of principal behavior and factors mediating the influence of the behavior on students also appear in Figure 1.

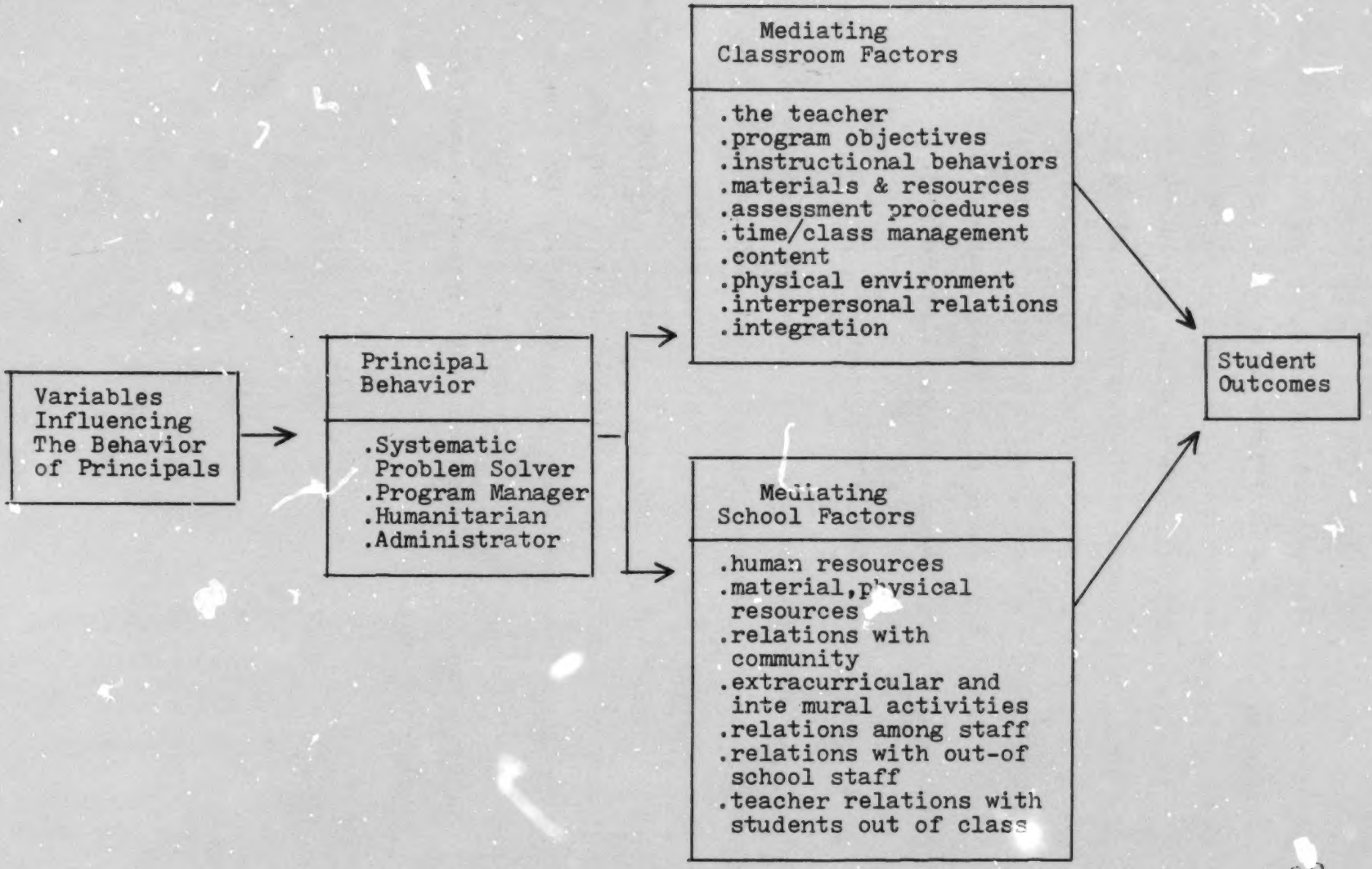


Figure 1. A framework for guiding research on the principals' role.

Four patterns of behavior among practicing principals are evident in our data to which we have attached the descriptive labels: Administrator, Humanitarian, Program Manager, and Systematic Problem Solver[9]. These patterns of behavior vary in their relationships to the seventeen mediating classroom and school factors and so in their effects on student outcomes.

Our research on variables influencing principal behavior, the focus of this paper, was significantly influenced by data distinguishing four patterns of principal behavior. "What variables influence principal behavior?" served only as a crude starting point for research. More refined questions, given the identification of four behavior patterns, included: Are there a common set of factors shaping the behavior of most or all principals? If so, what are they? Are principals who engage in different patterns of behavior influenced by different factors? Which factors most influence principals adopting each pattern of behavior? If some factors vary in their influence among principals, what accounts for such variation?

Series 1: Obstacles to Growth in Principal Effectiveness[10]

Three studies were carried out to explore the perceptions of principals and supervisory officers concerning "obstacles" facing principals in doing their work more effectively; the task environment remained general and unspecified. The first

two studies in this series were descriptive in nature and considered principals as an undifferentiated group. The final study examined the relationship between obstacles and principals' levels of effectiveness. Estimates of principal effectiveness were made using instruments developed in our research describing different patterns of principal behavior, e.g. Leighwood & Montgomery, 1984.

Our choice of "obstacles" as a focus for this series of studies was based on a conception for planned change within which our research on principals is rested (Leithwood & Montgomery, 1982; Leithwood & Robinson, 1979; Leithwood, 1982). We view planned change as a process of growth in incremental stages from less to more desired states. Growth from one stage to the next most desireable stage depends on identifying obstacles to such growth and taking steps to overcome them. Most obstacles fit into one or more of three categories: lack of knowledge and skill, lack of incentives to change, and lack of appropriate material resources and organizational arrangements. Our conception for planned change suggests the likelihood that each stage of growth in the process of change brings with it at least a partially unique set of obstacles.

Specific Framework

Data collection and analysis throughout the three studies was guided by a two-dimensional framework for classifying obstacles, one dimension of which was the threefold category system mentioned above (lack of knowledge and skill, etc.).

The second dimension consisted initially of five categories of obstacles associated with roles and people in the school system: teachers, the principal's role, role incumbents (the specific people in the role of principal), the board (primarily central administrators), and the community (parents and the wider school community). These five categories of obstacles emerged from reviews of research largely about innovation process and school effectiveness[11].

Methods and Results

Study One

All 65 elementary school principals in one school board participated in this study through the use of a self-administered questionnaire. The 66 items in the questionnaire, hypothesized obstacles, were developed from four sources: a detailed review of existing research (as summarized above); a content analysis of lengthy pilot interviews with 8 principals; a set of related data emerging from a companion project in the same board but focused on secondary schools; and detailed records of the interactions of an 11-member staff committee working with the investigators on this and related research over 8 days of meetings.

Principals responses to the Study One survey, indicated low levels of concern for the 66 obstacles as a whole which they were asked to rate; this was also the case with each of the five categories of obstacles, as a whole. Within categories, however, principals identified obstacles they

believed to be quite strong influences on their behavior. Seven out of the 12 items rated highest (creating most difficulty) were found in the "Central Administrator" category of obstacles. These specific obstacles included: failure to provide adequate resources, failure to provide time for curriculum work, and insufficient support services. The remaining 4 factors are associated with board policy and procedures; split grades, vague curriculum guidelines, the amount of busing, and the requirement that principals evaluate programs and teachers, presumably jeopardizing their consultive function.

Although the items in the class of difficulties associated with teachers were perceived to create only slight to moderate difficulties for principals, 2 of the 15 specific obstacles appeared among the 12 highest-rated items overall. These problems suggest a perceived lack of knowledge and skill on the part of principals in assisting teachers directly with implementation of programs, and with more general development tasks. But principals did not perceive a critical lack of leadership skill on their own part to be a serious obstacle.

Study Two

The same questions asked of principals in Study One were asked of all 15 central office administrators in the same school board, in two stages. First, interviews averaging approximately 1½ hours were conducted; a content

analysis was done of the audio taped record of each interview. A second round of data were collected from the same people using a self-administered questionnaire developed from a content analysis of the original interviews. Obstacles identified through interviews were organized into 104 statements of obstacles perceived by principals. These statements were placed into one of three categories, depending on the nature of the obstacles: (1) lack of knowledge and skill; (2) lack of motivation, suitable rewards, and incentives; or (3) inappropriate organizational arrangements, including inadequate human resources. Senior administrators were asked to indicate the degree of difficulty posed to principals by each obstacle.

For the most part, data from the questionnaire reaffirmed opinions expressed during interviews. Results of both sets of data showed some substantial areas of both agreement and disagreement in comparison with Study One results. Two sources of difficulties for principals dominated the views of senior administrators: central administration and role incumbents, with the latter cited almost twice as frequently as the former. Central administration obstacles mostly concerned inadequate resources or organizational arrangements being provided to principals. Senior administrators also perceived a substantial number of disincentives facing the principals' program improvement efforts for which central administration was responsible (i.e. conflicting advice and information to principals and infrequent rewarding of good

work). Lack of knowledge and skill among central personnel was perceived to be a relatively modest source of difficulty for the principal. Lack of knowledge and skill on the part of principals, however, was perceived by central administrators to be the dominant type of obstacle facing principals. Lack of principal motivation ran a significant but distant second.

Study Three

This study continued to explore obstacles perceived by principals as a whole, as in the first 2 studies; its main purpose, however, was to determine the extent to which variations in principals' levels of effectiveness were related to variations in perceived obstacles. We consider the study to be largely exploratory, partly because of the small sample size of principals drawn from two school systems. With only 15 principals in the total sample, different levels of effectiveness were represented by only 4 to 5 principals in each case. Further, there was not included among these principals a style or pattern of behavior which we and others have found to be quite common but only minimally effective (principals demonstrating this pattern have been variously labelled Administrators, Responders and the like).

Data required to determine a principal's level of effectiveness were collected first; using a structured interview technique (Leithwood & Montgomery, 1984). Several months later, data about perceived obstacles were collected from the same principals using a semi-structured, tape recorded,

interview lasting an average of approximately 1¼ hours. Through a content analysis of the transcribed tapes, 450 statements from principals about obstacles were organized into 61 sub-categories. Each of these sub-categories proved to be readily relatable to one of the categories of obstacles used in the previous studies, with the addition of the category "Student".

As in Studies One and Two, principals in this study most frequently identified obstacles associated with Central Administration; approximately 30% of all statements were attributed to this category. Principals at all levels of effectiveness agreed on the dominance of this category of obstacle. The least frequently identified obstacles were those associated with students; approximately 7% of all statements were atrributed to the Student category.

No strong relationships between major classes of obstacles and levels of principal effectiveness were apparent in the data; for example, there were as many differences between the four most effective principals in the study as between them and the remaining principals. Less effective principals, however, showed a marginal tendency to indentify more obstacles associated with the community than their more effective peers. There was also a tendency for more effective principals to identify more obstacles associated with Role Incumbents than their less effective peers.

Conclusions

Results of these three studies consistently identified variables associated with the board or central administration and the principals' own lack of knowledge and skill as obstacles to effectiveness. The design of these studies, however, placed serious limits on their external validity and prevented more than initial exploration of differences in variables influencing principal behavior given differences in exhibited patterns of behavior.

Series 2: Factors Influencing the Policy Implementation Behavior of Principals

Two studies were completed in order to explore factors which principals themselves believed were an influence on how they went about the policy implementation process in their schools. A longitudinal study (over a three year period) of the implementation of Ontario's recent special education legislation in five school systems provided the context within which these studies of the principals' role were conducted. What will subsequently be referred to as "Bill 82", offered a well specified task environment for following up results of the previous studies in which the task environment remained unspecified. Our view of policy implementation as a problem solving task for the principal made specificity of the task environment a crucial variable to manipulate: evidence suggests that problem solving

behaviors are significantly shaped by task environment (e.g. Larkin, McDermott, Simon & Simon, 1980). In addition to continuing to explore the questions common to both series of research studies reported in this paper, therefore, we were also curious to know the extent to which influences on principals' behavior varied according to the task being addressed by principals.

Specific Framework

Both studies of factors influencing principals' policy implementation behavior were guided by a conception of the policy implementation process originally resulting from a review of largely case study research done in non-educational organizations (Leithwood & Anderson, 1983). Our analysis of the twenty-five studies included in this review suggested that policy implementation could be conceived of as a change over time in the roles of people involved in policy implementation, in response to a number of "implementation components". Figure 2 identifies these 5 components, 3 of which are categories of factors which influence, through a complex set of relationships, the actions of people involved in policy implementation. These actions, in turn, contribute to whatever the outcomes are of policy implementation. The category of factors labelled, Specifications, includes the responsibilities or actions explicitly identified for an "agent" in the policy itself or its subsequent regulations. The political and

Organizational Context factors encompass characteristics of the organizational or broader political environment; in which implementation must take place, likely to affect the process or outcome of implementation. Personal Context factors incorporate implementation agents' beliefs, values and experiences, as well as their interpretation of the significance for them of Specification and other context factors. Each of the three categories encompasses a number of specific factors identified as an influence on the behavior of some policy implementor.

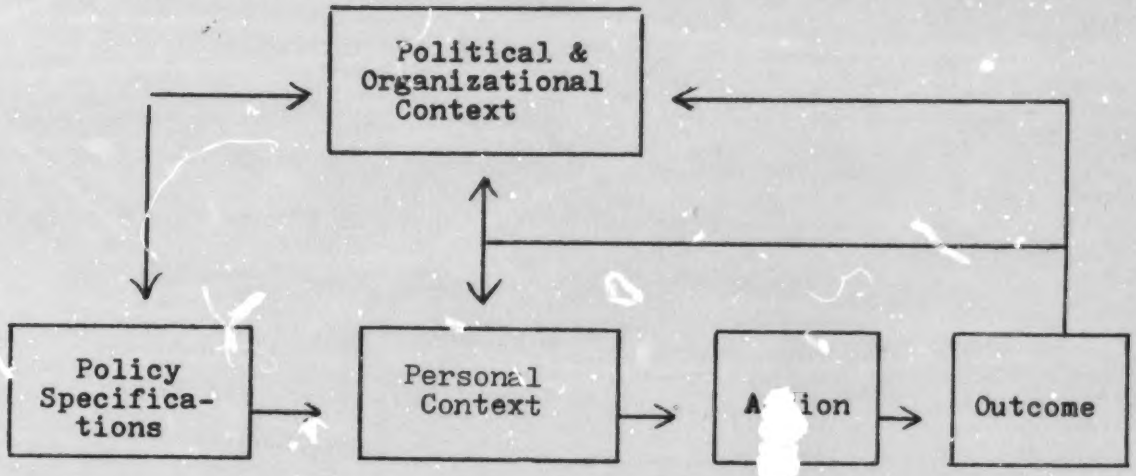


Figure 2. The "implementation components" construct of a model of the policy implementation process.

Using the same three categories of factors as an organizer, Trider[12] completed a subsequent review of school-based empirical research concerning policy implementation. The seventeen studies included in this review confirmed the relevance, in a school context, of all factors identified by Leithwood & Anderson (1983) and added more specific factors within each category as potential influences on principals policy implementation behavior or actions. Within the category, Policy Specifications, a total of 18 specific factors were identified in the sub-categories (1. clearly articulated program objectives[13]; 2. implementation strategy[14]; 3. complexity of the innovation[15]; and 4. structural changes[16]. Some 16 specific factors were identified as part of the political[17] and organizational[18] context (e.g. Resources: funding, time, personnel; adequately trained personnel; support of local administration). The four Personal Context Factors identified by Trider were principals' stage of concern, assumptions about their role, definition of the problem and assumption about the competence of staff to implement the policy[19].

Results of the Leithwood & Anderson (1983) and Trider (1985) reviews provided a lengthy list of factors potentially influencing principals' policy implementation behavior; they also offered some insights into the possible relationships that might exist among factors. The two studies in this series attempted to sift out, from the lengthy list of potential influences on principals' behavior, those that were

actually an influence. We asked about the relative weight of factors, in the view of the principals, and the types of variables that caused principals to ascribe more or less influence to a factor. We wanted to know why some factors were more influential than others and what was the nature of the relationship among key factors.

Methods and Results

Study One

As part of the first year data collection in our 3-year study of Bill 82 implementation, 23 randomly selected elementary (15) and secondary principals (8) from three school boards were interviewed. Lasting an average of 1½ hours, these audiotaped interviews were structured by the components of the policy implementation process depicted in Figure 2. Principals were asked about their actions, in relation to those identified for principals by the policy: these questions were intended to reveal variations among principals in how they went about the policy implementation process. Principals were also asked about factors influencing their actions and the perceived outcomes of policy implementation. Almost no structure was imposed on questions to principals about factors influencing their actions. Our interest was in determining which of the factors identified through the literature reviews would be identified spontaneously and whether there were additional factors that

we had not yet identified.

Content analysis of interview data concerning principals' actions revealed substantial variation among principals. While all principals addressed a common core of five implementation tasks specified in policy, they did so in three quite distinct ways. The five tasks and variations in the way they were performed are as follows:

Task One: The identification of students with special needs, by:

(a) encouraging teachers to carefully assess their students looking for special needs; or

(b) collaborating with teachers in deciding how to proceed once they become aware of a possible problem being experienced by a student; or

(c) assuming this task was the responsibility of others and not becoming involved in it.

Task Two: The modification and implementation of student programs following identification, by:

(a) actively initiating and supervising the modification and implementation of student programs; or

(b) collaborating with teachers in program modification and implementation once the teacher has initiated this activity; or

(c) not becoming involved in modification and implementation of programs - teachers carry out this task.

Task Three: The identification, placement and review of students (IPRC), by:

(a) acting as chairperson and working with members of the IPRC committee to arrive at a recommendation; or

(b) participating as any other member of the IPRC; or

(c) not becoming involved in IPRC responsibilities - in-school or board personnel handle this.

Task Four: Interacting with parents, by:

(a) mairtaining a high level of communication with all parents, at all times; or

(b) following board policy and discussing with parents in advance of any recommendations to be made to an IPRC; or

(c) communicating with parents for special cases - as required by the policy.

Task Five: Post-placement programming and monitoring; by

(a) assuming full responsibility for reviewing placement and monitoring progress; or

(b) accepting this as part of principals' responsibility by expecting teachers to monitor as well; or

(c) delegating this responsibility and only becoming involved during in-school reviews and case conferences.

Principals showed consistency in the way they performed most of the five tasks. For example, a principal who demonstrated considerable initiative in performing task one - alternative (a) - tended to approach the remaining four tasks in the fashion also described as alternative (a). Alternatives (a), (b), and (c) appear to be manifestations, in a particular task environment, of dominant patterns of principal behavior toward the role, as a whole. Consistently choosing alternative (a) is symptomatic of a behavior pattern we have labelled elsewhere as that of the Program Manager; Humanitarian

and Administrator are labels we have applied to patterns of behavior suggested by a consistent choice of alternatives (b) and (c) respectively.

Principals' unstructured responses to questions about factors influencing their policy implementation actions identified 13 specific factors, each clearly linked to one of the 3 factor categories identified in Figure 2.

The five factors related to specifications contained in the policy or related documents included: (a) identification of students with special needs; (b) program development for these students; (c) expectations of parents to be considered; (d) review of placement and progress to be undertaken; and (e) maintaining records for each child.

Three specific factors concerned with the organizational and political context in which policy is to be implemented were identified by principals: (a) local circumstances; (b) leadership provided by central office; and (c) resources available for implementation.

Finally, four factors were concerned with the personal context of the implementor: (a) the role specified in policy for the implementor; (b) personal beliefs and experiences; (c) information about policy implementation from school board; and (d) perceived needs of the school.

This study highlighted the importance of a selected group of factors identified in the literature reviews: it also provided a relatively precise description of alternative approaches taken by principals to implementation of Bill 82.

Questions about the relative strength of factors in influencing principals and the relationship between factors and patterns of behavior could not be answered by the data, however. These questions, as well as an interest in other variables that might effect the influence of factors on principals, stimulated the second and major study in this series.

Study Two

This study combined standard survey and qualitative data collection techniques in two stages. Following a pilot test and revision with 12 principals, a questionnaire was distributed to a sample of 150 elementary and secondary principals in 5 school boards (114 questionnaires were returned). The questionnaire asked principals to rate the strength of influence on their policy implementation behavior of 71 factors identified in all previously described reviews and studies. Evidence available from these studies and reviews also suggested that the influence of these factors could be related to five variables:

- the condition of the factor (whether favorable or unfavorable);
- the stage of policy implementation ("early in the process" and "at present");
- the pattern of policy implementation behavior adopted by the principal (Program Manager, Humanitarian, Administrator);
- principals' specialized knowledge (in special education or in another area);
- the size and type (elementary or secondary) of school administered by the principal.

The questionnaire asked for information about each of these variables and data were computer analyzed using the revised version of the Statistical Package for Social Sciences (SPSS Inc., 1983).

Following analysis of the survey data, post survey interviews were conducted with 12 principals who had completed the questionnaire. The purpose of those interviews was to probe for explanations of the responses which they had provided in the questionnaire[20]. Principals were selected to present as much variation as possible on each of the five variables hypothesized to have a relationship with the influence of factors.

In the subsequent report of results, we first present data about the overall strength of influence of the 71 factors on the policy implementation behavior of principals. We then examine, in turn, the relationship between the influence of factors and each of the 5 variables outlined above. In most cases, results are examined through the direct rating of the factors themselves as well as 19 categories of these factors identified through factor analysis. Because of limited space, the subsequent text and tables primarily highlight and summarize the results of the data analysis.

Overall influence of factors. Table 1 reports the relative strength of factors rated by principals as being of greatest influence on their policy implementation behavior.

Table 1

Ten Highest Ranked Factors

Variables Potentially Influencing Factor Strength	Rank Order of Factor Strength[1]									
	1	2	3	4	5	6	7	8	9	10
1. Overall Strength	32	29	11	68	17	6	30	40	31	19
2. Stage in Process: Early	32	29	68	13	30	40	17	19	31	12
3. Stage in Process: Current	29	32	11	17	6	68	50	38	30	31
4. Principal Training: Special Education	68	29	32	31	33	36	40	38	17	39
5. Principal Training: No Special Education	32	29	11	17	68	6	30	40	19	22
6. Pattern of Behavior: Administrator	6	11	29	13	17	32	33	50	36	38
7. Pattern of Behavior: Humanitarian	32	29	17	11	30	68	40	12	44	19
8. Pattern of Behavior: Program Manager	68	29	32	31	40	22	11	30	50	17

[1]Factors were each assigned a number from 1-71. These are the numbers which appear in the cells of the Table.

Those ten factors ranked of greatest influence overall are identified in column 1. Columns 2 through 8 identify the 10 highest ranked factors when 3 of the variables hypothesized to influence factor strength is considered (stage, specialty, pattern). Factors in column 1 include:

- Item 32: experiences within the education profession
- Item 29: beliefs about what is best for students
- Item 11: attitude of central administration toward implementation of Bill 82
- Item 68: agreement with goals of Bill 82 policy
- Item 17: planning undertaken by central office
- Item 6: value of assistance provided by board support staff
- Item 30: opinion of change in general
- Item 40: amount of direction staff are willing to accept from principal
- Item 31: knowledge of special education
- Item 19: working relations among central office staff, principal and teachers

The extent of the influence principals attribute to this core of 10 factors can be estimated in two further ways. The first way is to examine their reappearance in relation to the 3 variables noted in columns 2 through 8. In column 5, 9 of the original factors are identified; 8 are identified in columns 2, 3, and 8. Five, 6 and 7 of these factors appear in columns 6, 4, and 7 respectively.

Yet another way of estimating the strength of the core of 10 factors is through the results of factor analysis. Table 2 identifies those clusters of categories resulting

BEST COPY AVAILABLE

from such analysis that rank highest overall and when each of three variables is entered into the analysis.

Table 2

Five Highest Ranked Factor Analytic Categories

Variables Potentially Influencing Category Strength	Rank Order of Category Strength				
	1	2	3	4	5
1. Overall Strength	2	13	1	7	9
2. Stage in Process: Early	2	13	7	1	11
3. Stage in Process: Current	2	13	1	7	11
4. Curriculum Specialty: Special Education	2	1	16	5	13
5. Curriculum Specialty: Other	2	13	7	9	1
6. Pattern of Behavior: Administrator	13	2	11	9	5
7. Pattern of Behavior: Humanitarian	2	13	7	9	1
8. Pattern of Behavior: Program Manager	2	1	13	9	16

Categories in column 1 include:

- Category 2: accumulated expertise principals bring to policy implementation (includes factors 23, 29, 30, 31, 32);
- Category 13: probability of successful implementation of the policy in the school (includes factors 11, 39, 61);
- Category 1: compatibility of values and beliefs with those relevant to Bill 82 policy (includes factors 38, 43, 52, 68, 70, 71);
- Category 7: overall impact of central administration on policy implementation (includes factors 17, 18, 19, 21, 22);
- Category 9: norms and incentives in the school system related to policy implementation (includes factors 8, 14, 25).

All 5 of these categories reappear in columns 5 and 7 of Table 2. Four of the categories reappear in columns 2, 3, and 8; 3 in column 6; and 2 in column 4. Furthermore, 8 of the 10 highest ranked factors appearing in Table 1 are included in the 5 categories resulting from factor analysis; 4 such factors are included in highest ranked Category 2 alone.

What do these data tell us, in sum? Our sample of principals, overall, perceive their policy implementation behavior to be substantially influenced by two small subsets of the whole 71 factors to which they responded. The most influential subset fall within the category of factors, identified in our model of policy implementation as Personal Context factors. In particular, principals professional experiences, beliefs and values appear to determine, in large measure, what they do: these are general experiences, opinions

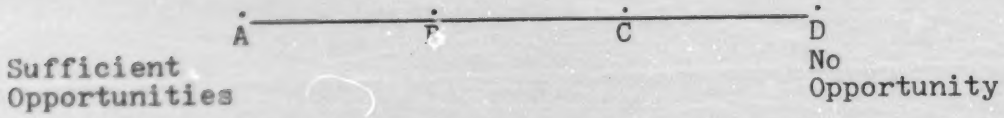
about change and views of what is best for students (factors 29, 30, 32); as well as values and beliefs specifically related to policy (factors 31, 68). When directions suggested by policy are consistent with (a) what principals value for students, (b) actions which past experience suggest will be successful, and (c) what principals know how to do then considerable efforts by principals to implement policy seems likely.

The second subset of factors reported to be of considerable influence are part of our model of policy implementation called Organizational Context. Principals perceive themselves to be strongly influenced by the amount of and nature of planning, the attitude and the assistance provided by central office staff (factors 17, 11, 6). As well, relationships with and among school staff and the likelihood of their cooperation in policy implementation (factors 40, 19) have a strong influence on principals' actions, in their opinion.

Condition of factors. The questionnaire asked principals not only to rate the strength of each of 71 factors; it also asked them to choose the condition of the factor that best described its state in their own circumstances. For example, factor 1 was:

> opportunities for your staff to be involved in the formulation of the board's policy.

In order to describe the condition of the factor in their own circumstances, principals responded to the item:



Two such responses were requested for each factor: one describing the condition of the factor "early" in the implementation process; the other described it "at present". Our purpose in asking these questions was to examine the relationship between a factor's perceived influence and its condition. Of the 71 correlations completed between strength of influence and condition of the factor, 36 were statistically significant at the $p < .001$ level. Only 9 of 71 correlations failed to reach significance at the $p < .05$ level. These results, then, support the general proposition that as the condition of a factor increases in its perceived favorableness, so does the perceived influence of the factor on principals' behavior.

Of more practical value than such general results, however, is the identification of factors that are highly influential overall, as well as being sensitive to variation in their condition. Very few factors of this sort were found in the data. Of those ten factors showing the largest correlations between strength of influence and condition, only three are to be found among the ten most influential factors reported in Table 1. Factor 32: "the principals' experiences within the education profession", was ranked as the most influential factor overall (Table 1) and had the fifth highest correlation with condition of all 71 factors.

Factor 30: "the principal's opinion of change, in general", was the seventh ranked factor in Table 1 and had the ninth highest correlation with condition. "The working relationships that exist between central office administrators, school administrators and teaching staff", Factor 19, was tenth ranked in influence and had the eighth highest correlation with condition.

Although not ranked among the ten most influential, two other factors appear worthy of attention. Factor 22: "the value of inservice sessions provided for principals by central office staff", was ranked thirteenth in strength of influence overall and had the second highest correlation with condition. Similarly, Factor 13: "the amount of support you receive from central office administrators", ranked fourteenth in overall influence and had the sixth highest correlation with condition.

The five factors that we have selected for attention here vary considerably in their susceptibility to intervention in the short run. General professional experiences of principals and principals' opinions of change are likely to remain immune to short term intervention. But the conditions of the remaining three factors would seem to be alterable even in the short run.

Principal training. The questionnaire asked principals to identify the curriculum areas that they considered to be their specialty. Fifteen principals identified special

education. The ratings of factors given by these principals were compared with the ratings of all other principals to explore the relationship between factors influencing principals' policy implementation behavior and specialized knowledge in the policy area.

Table 1 provides a crude estimate of how much difference specialized training appears to make in principals' estimates of the influence of factors on their behavior. Principals with and without such training identified, in common, 5 highly influential factors which we have already discussed (factors 17, 29, 32, 40, 68). In addition to these 5 common factors, principals trained in special education identified as highly influential factors 31, 33, 36, 38, and 39. Differences in ratings between the two groups on these factors approached statistical significance ($p < .10$) for Factor 33 only (amount of professional reading undertaken by the principal on the topic of special education). Nevertheless, the remaining four factors consistently support the importance these principals attribute to their own knowledge and judgements about appropriate special education services:

Factor 31: principals' knowledge of special education;

Factor 36: principals' estimate of childrens' rate of progress in their schools (those receiving special services);

Factor 39: principals' estimate of teachers' ability to implement the policy; and

Factor 38: principals' opinion of their own progress in implementing the policy.

Principals not trained in special education identified, beyond the shared core of influential factors, Factors 6, 11, 19, 22, and 30. Differences between groups of principals approached statistical significance ($p < .10$) on Factor 11 only (the attitude of central office administrators to the implementation of Bill 82). Three of the four remaining factors are consistent with this orientation toward organizational factors, in marked contrast with the personal context orientation of specially trained principals (i.e. value of central office assistance, inservice for principals, schools' past experience in policy implementation).

Differences in ratings by the two groups of principals were statistically significant in the case of four additional factors all of which were, however, ranked relatively low by both groups.

Stages in the implementation process. Principals rated the strength of the 71 factors at two points in time; "early in the process" and at the time of completing the questionnaire ("at the present time"). Research concerning the change process frequently asserts distinct stages of change; for example, initiation, implementation, and continuation. While the factors influencing change at each of these stages are thought to be different, there is little empirical evidence available bearing on the issue. Our data addressed this issue, with principals, by computing the significance of differences in the ratings principals awarded each factor at the 2 points in time. We did similar

calculations with the factors aggregated in the categories generated through fa tor analysis.

Each factor was rated differently at the two stages of implementation. Of these differences in rating, 35 were statistically significant ($p < .001$) and all but 3 of the 71 increased from the earlier to later implementation stage. All but one of the 19 factor analytic categories were rated significantly higher ($p < .05$ or less) at the later implementation stage (Factor 6: "your personal family situation" was rated marginally lower).

The five factors which increased most in strength from the early to later stages in the implementation process included: principals' opinion of their progress in implementing the policy (F38); the value of the assistance provided by support personnel from the board (F6); staff input through a team approach to decision-making in the principals' school (F50); the rate of progress of the children receiving special services in the principals' school (F36); and the amount of special education services provided in the school prior to the policy (F53). These factors are related to the internal operation of the school with an emphasis on internal monitoring of implementation progress. With the exception of Factor 6, which ranked high overall, these factors shifted from a position of moderate influence early in the process to a relatively strong influence later in the process. The five factor analytic categories showing the greatest increase in perceived influence included (in order):

Category 11: support that comes from the principal's administrative colleagues;

Category 16: compatibility of existing school system practices with the intentions of the policy;

Category 15: amount of feedback from external school sources;

Category 8: contribution and support received from all groups with an interest in special education;

Category 1: compatibility of principals' values and beliefs with the board's Bill 82 policy and board policy in general.

Notwithstanding significant shifts in the strength of these categories during the implementation process, Table 2 indicates that the same five categories (including 1 and 11) exercise strongest influence at both stages in the process. Increases in category ratings appeared to change the relative strength of these factors little or not at all.

Results suggest, in sum, that many factors take on greater importance, in principals' views, as efforts to implement policy proceed. This is particularly the case with respect to factors concerned with the internal operation of the school and categories of factors focused on support provided to the school by a variety of groups outside the school. Nevertheless, a central core of common factors remain influential at both stages in the implementation process.

The increase in influence among the aggregated set of Personal Context factors, from early to later in the process, is statistically significant ($p < .001$). But the aggregated set of Organizational Context factors showed an increase in

rated influence almost 30% greater.

Patterns of principal behavior. Principals responded to a series of fixed-choice questions, early in the survey, describing the basic pattern of behavior they had adopted in implementing Bill 82. The alternative orientations taken by principals to each of five implementation tasks were labelled in Study One (see above) as Program Manager, Humanitarian and Administrator. Choosing the same orientation to 3 of the 5 implementation tasks qualified a principal for the label of that orientation. Eighty-nine principals completing the questionnaire qualified for one of the three behavior pattern designations: 29 Program Managers, 50 Humanitarians, and 10 Administrators. We wanted to explore the relationship between a principal's adopted pattern of implementation behavior and the factors influencing that behavior.

Eighteen factors were rated significantly differently by principals with different patterns of behavior. Factors awarded significantly greater strength by Program Managers than Humanitarians and/or Administrators included: the number of staff in the principal's school (F27); principals' knowledge of special education (F31); amount of professional reading undertaken by the principal on the topic of special education (F33); amount of direction the principals' staff is willing to accept from them (F40); principals' agreement with the goals of the the Bill 82 policy (F68); and staff's goals for exceptional children (F54).

Factors awarded significantly more influence by Humanitarians than Program Managers and/or Administrators included: awareness of central office staff of other school objectives the principal is pursuing (F18); awareness of central office administrators of the principals' school and community (F20); number of students in the principal's school (F26); attention given to Bill 82 by the Ministry of Education (F49); amount of special education services provided in the principal's school prior to the policy (F53); opportunity for school-level decision-making (F61); difficulty the principal foresees in implementing the policy (F67); opportunities to try different approaches to the implementation of Bill 82 (F69); results of periodic evaluation during the principal's implementation of the Bill 82 policy (F55).

Administrators did not award significantly more influence to any of the 71 factors considered individually than did either of the other two categories of principals: the only differences reaching statistical significance concerned Administrators assigning significantly less influence to three factors: the number of inservice sessions provided for principals by central office (F21); the clarity of the written documents from the school board (F44); and the principal's understanding of the legal implications of Bill 82 (F48).

A significant shift in the influence of "Personal Context" factors from Program Managers to Humanitarians to Administrators is evident in this description of factors.

The magnitude of this shift is indicated by a statistically significant difference ($p < .05$) between Program Managers and Administrators in the influence of Personal Context factors.

Although correlation of these data appear to help us better understand some of the fundamental reasons for differences in actions taken by Program Managers, Humanitarians, and Administrators; they identify factors that are more important to them in their decision-making. Those who initiate action (Program Managers) are influenced more than principals adopting other patterns of behavior by their own knowledge of special education and agreement with the goals of the policy. They are also influenced by certain school-level factors as opposed to factors external to the school. Those who work cooperatively with teachers in arriving at decisions (Humanitarians) seem influenced in their decisions almost equally by Personal Context and Organizatioal Context factors. Principals who provide teachers with latitude to make their own decisions (Administrators) in contrast to the other two groups of principals seem to be relatively more effected by Organizational Context factors lying outside the school.

The nature of influence on each of principals' three patterns of behavior evident in the analyses of factors was substantially supported by our analyses of the factor analytic categories. The two analyses together, suggest a high degree of influence by Personal Context factors and Organizational/Political Context factors, as they relate to central office personnel, on each of the patterns of

principal behavior. Program Managers, nevertheless, adopt a relatively more autonomous stance toward the implementation of their board's Bill 82 policy. They bring more forcefully to the implementation of that policy, a set of strongly held beliefs about what is required with these beliefs only moderately influenced by external sources such as central office personnel and school staff.

Humanitarians are also influenced, but to a lesser extent, by Personal Context factors. They are influenced more than Program Managers by central office factors. It is very important for these principals to receive support through effective working relationships; frequent, high-quality inservice sessions; and positive attitudes from central office personnel. In addition, because these principals work closely with teachers in making decisions about implementing the policy, it is important for them to have opportunities for school-level decision-making.

Administrators also consider a host of Personal Context factors to be important influences in how they proceed to implement the policy; such factors are secondary, however, to factors external to the school (Organizational Context and Policy Specification factors). These principals are most influenced by a series of Organizational Context factors emphasizing a strong central office presence. Administrators, in allowing teachers to make their own decisions, consider it important to have opportunities to make decisions at the local level and to receive support from central office personnel. Administrators also look to central

office supervisors, support personnel, and fellow principals for support and reinforcement of their decisions.

Summary and Conclusion

Research described in this paper is situated within a more comprehensive framework for understanding the nature of principal behavior, its causes and consequences (see Figure 1). Five studies (using two different theoretical perspectives), exploring the causes of principal behavior were reported. Results of these studies are by no means conclusive. Reliance on self-report data, correlational research designs and limited sample sizes argues for caution in interpreting the data. Nevertheless, results across studies are quite consistent; they offer, however tentatively, intriguing implications for research and practice concerning school change in general and policy implementation in particular.

Common to the five studies, as a whole, were the questions: "What variables or factors influence principal behavior?" and "Are there a common set of variables shaping the behavior of most principals?". Figure 3 summarizes the answers to these questions based on highlights of data from the five studies.

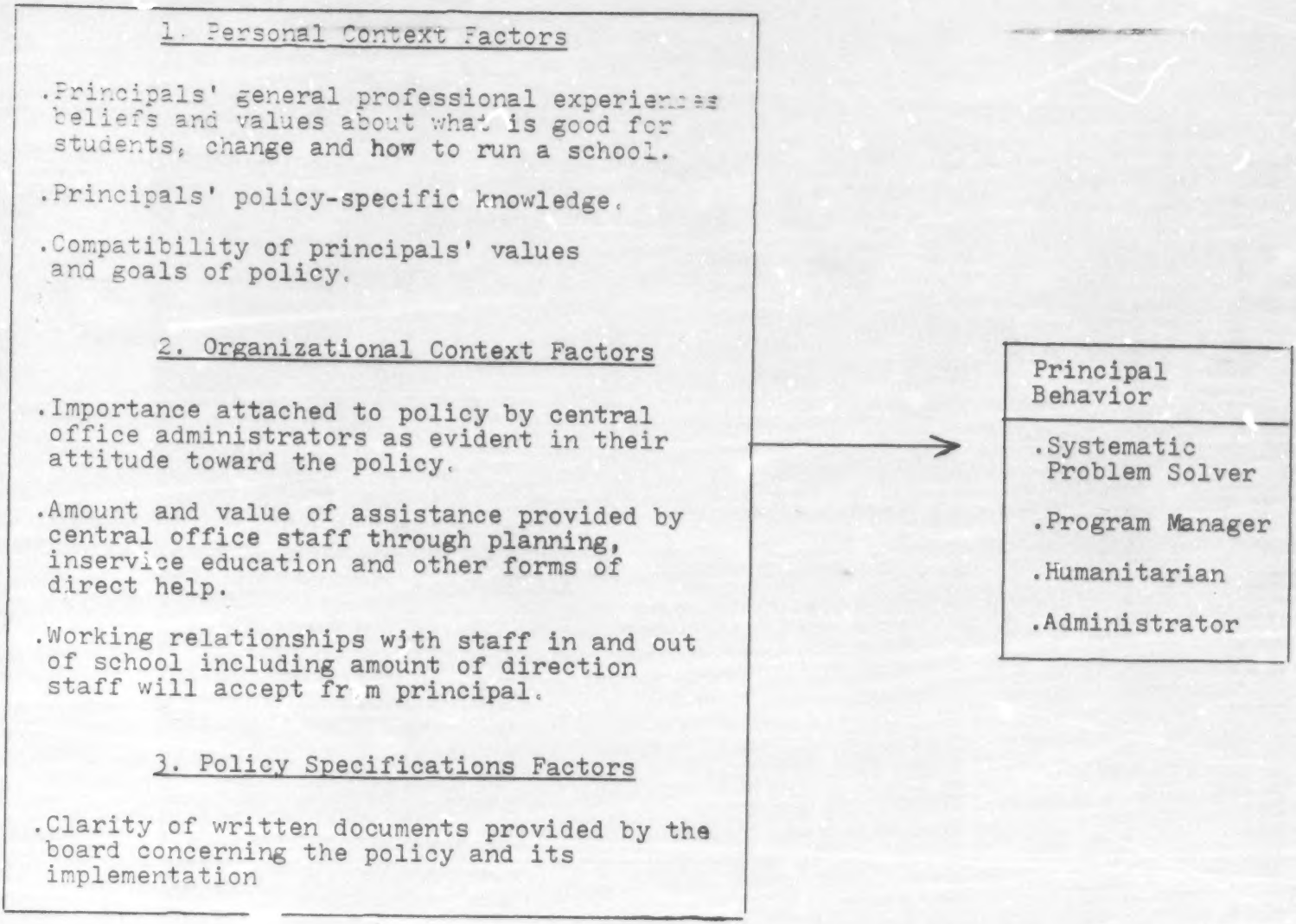

1. Personal Context Factors
.Principals' general professional experiences beliefs and values about what is good for students, change and how to run a school.
.Principals' policy-specific knowledge.
.Compatibility of principals' values and goals of policy.
2. Organizational Context Factors
.Importance attached to policy by central office administrators as evident in their attitude toward the policy.
.Amount and value of assistance provided by central office staff through planning, inservice education and other forms of direct help.
.Working relationships with staff in and out of school including amount of direction staff will accept fr m principal.
3. Policy Specifications Factors
.Clarity of written documents provided by the board concerning the policy and its implementation
Principal Behavior
.Systematic Problem Solver
.Program Manager
.Humanitarian
.Administrator

Figure 3. A summary of variables influencing principal behavior

BEST COPY AVAILABLE

There appears to be a core set of factors having considerable influence on the behavior of most principals. Among such factors, those internal to the principal predominate: professional experiences, beliefs and values regarding schooling, in general, and the policy to be implemented in particular. All but the last of these factors are quite similar to factors also identified by Dwyer et al (1984). The symbolic valuing of the policy to be implemented and the practical assistance provided by central office staff appear to carry less but still substantial weight in shaping what principals' do. Specific characteristics of the written policy and related regulations are of much less importance in determining what principals do, however. That is, while principals are crucially concerned with the intentions of policy, other features that might be included such as instructions for implementation or monitoring, appear tobe weak influences. The one exception to this generalization is evident in the concern principals have with the clarity of whatever documents are provided to them about the policy by their school boards.

Clearly, the "interior lives" of principals have an enormous bearing on their behavior in implementing policy; we should be surprised were it otherwise. Yet we know very little about the personal beliefs and values that principals consider relevant in their professional decision-making. Are there predictable patterns of such values and beliefs and just how are they brought to bear on the decision-making

process? This would seem to be a worthwhile question for subsequent research. Policy implementation planners, too, would do well to recognize the crucial role that Personal Context factors have in shaping principals' actions. Significant discrepancies between principals' values and beliefs and those assumed by policy, are likely to become major obstacles to policy implementation. Implementation plans should provide for the discovery of such discrepancies and the explicit resolution of conflicts in beliefs and values.

Two of the five studies discussed in this paper asked whether there was any relationship between factors influencing principal behavior and the dominant pattern of behavior adopted by a principal. While our first exploration of this question (Series One; Study Three) was quite inconclusive, our second attempt (Series Two: Study Two) yielded more useful results. Principals demonstrating a pattern of behavior labelled Program Manager appeared to be even more influenced than others by what we have called "Personal Context" factors when implementing policy because, as one principal said during our post-survey interviews:

> These /factors/ are mine, . . . your agreement with goals, your knowledge, your staff, your beliefs, and your experiences . . . its how real it is to you and your involvement.

These principals tended to act in a relatively autonomous fashion, although within the boundaries of action established by their boards. In addition to being influenced

by those Personal Context factors identified in Figure 3, these principals differed from others in the importance they attached to their own professional reading and specific conditions within their school likely to effect the policy implementation process.

Principals adopting a Humanitarian pattern of behavior, on the other hand, gave relatively equal weight to Personal Context factors and Organizational factors outside their own schools in deciding how they would implement policy; weighted quite heavily, for example, were awareness by central office staff of what was taking place in the school and services available to the school to help implement policy ("We need a little support sometimes, you know. If some parent blows, it's nice to know the guy upstairs, if it gets to him, is going to support what you are doing."). Within the school, opportunities for school-level decision-making were considered important. Administrators tended to attribute less weight to most sets of factors than other principals and no set of factors predominated in influence.

In these results, we infer the potential for three quite different outcomes of the policy implementation process. Program Managers seem likely to move in a more determined way than other principals toward implementing the spirit or intentions of policy, if they agree with those intentions. Humanitarians seem most likely to be concerned with implementing the letter of the policy in their schools, probably modified in ways that minimize staff dissonance.

Relatively modest change from existing practice, as a consequence of policy implementation, is a reasonable inference to draw from the modest influence of most factors on the behavior of Administrators. In the schools of Administrators, as compared with principals adopting other behavior patterns, the amount and nature of change seems likely to depend on staff rather than principal initiative and the organizational requirements of the change. Many changes associated with Bill 82, for example (e.g. conducting student reviews) are organizational and administrative in nature and, as a result, likely to be seen by Administrators as falling within their spheres of responsibility. Other policies without such features seem likely to be given less attention than Bill 82, by these principals.

Subsequent research might well investigate our inference concerning the relationships between differentiated policy implementation outcomes and alternative patterns of principal behavior. Policy implementation planners would do well to identify the patterns of implementation behavior adopted by their principals. A disproportionate amount of their support resources should probably be focused on the schools of Administrators, and Humanitarians should be provided with opportunities to move beyond compliance concerns in implementation toward understanding the intentions and spirit of the policy and how they might be realized.

One of the five studies (Series Two: Study Two) examined the relationship between several variables, other

than pattern of behavior, and factors influencing principal behavior - condition of the factor, stage in the implementation process, principal training, and size and type of school: the last of these variables appeared to exercise no influence on policy implementation behavior and so has not been discussed in the paper. "Condition of the factor" was shown to have a positive relationship with several highly influential factors, several of these factors, nevertheless, seem resistant to modification in the short run (e.g. general professional experience and the like); others appear to be quite susceptible to intervention (e.g. working relationships among staff, the value of principal inservice training, support from other administrators). Altering the conditions of these factors toward their most favorable state ought to be a priority for policy implementation planners.

As implementation proceeds, from early to later stages, organizational factors within the school take on greater significance to the extent that they have the potential for solving emerging problems of implementation in the school; so, too, does the support available from various groups outside the school.

Aside from the behavior patterns adopted by principals, however, the variable showing the greatest relationship with the influence of factors was the specialized training of the principal. School administrators with specialized knowledge in the policy area being implemented made decisions in the relatively autonomous fashion of the Program Manager. Such

autonomy is evident, for example, in these remarks collected through our post-survey interviews from a principal with special education training:

> I look at the policy and say, 'What is the intent? What is the rationale behind it? To what extent and I already doing what the policy is saying anyway?' And if I'm already following the line, well then I'm not going to worry about it so much . . . its not a priority . . . I'll just go on with something else.

These findings suggest the possibility, in fact, that the principal's special knowledge is a central determinent of the pattern of policy implementation behavior which they adopt. Principals without special knowledge seemed to rely extensively on the guidance provided by central office staff and the existing skills of staff. Perhaps their concern for working relationships can be attributed to their dependence on knowledge possessed by others and their desire to gain cooperation from such people to apply that knowledge in their school. During our interviews, following the survey, one principal said, for example:

> Because of the fact that I don't have an awful lot of background in working with special education, I rely very heavily on the people who have that kind of background . . . I don't rely too heavily on . . . the Supervisor of Music because I've been a music educator myself for a long time.

The importance of the principal's knowledge evident in our data, raises the final question asked in this series of studies as a whole: "Does the principal's 'task environment' have a bearing on the factors which influence her behavior?" We hunched that it would, at the outset, because we viewed the policy implementation behavior of

principals as problem solving. Substantial research on human problem solving warrants the claim that differences in the way people solve a problem depend to a considerable degree on the amount of structure they are able to impose on the problem[21]. Such structure is, in large measure, a function of the relevant knowledge a principal, in this case, is able to bring to the problem, rather than an objective property of the problem itself. Evidence from both series of studies ascribes considerable importance to the principal's own knowledge in determining how he will behave. Knowledge about curriculum development and implementation processes emerged as an important obstacle to growth in principal behavior in the first series of studies. Training in special education was attributed even greater importance in the second series of studies.

These results argue for the likely productivity of subsequent research more broadly concerning the problem solving strategies of principals. We are unaware of any research concerning principals explicitly guided by a problem-solving perspective. Furthermore, little research about problem solving seems to have concerned itself with the types of open-ended problems typically confronted by principals. How principals engage in problem solving, however, may provide quite fundamental explanations for differences in their overt behavior, its causes and consequence. Furthermore, if such explanations are found, teaching principals the problem solving strategies of their most effective peers may be among the most important

BEST COPY AVAILABLE

objectives to pursue in the pre-service and in-service training of principals.

Perhaps the most immediate implication for practice, in these results about the influence of principals knowledge, is the clarification of two quite distinct forms of intervention. A "support the principal" strategy is most helpful for principals without special knowledge of the policy; the key elements of this strategy are clear regulations, short term inservice for principals, help for the principal's staff and signals from superordinates regarding the importance of the policy evident in their expressed attitudes. This strategy is likely to increase dependence on central administration and produce policy implementation more consistent with a single model of such implementation espoused by the system. A "train the principal" strategy includes significant longer term background education in the policy area. This strategy seems likely to create greater autonomy of action on the principals' part, less reliance on central directives and greater variation in policy implementation models at the school level, although consistent with the spirit of the policy. Most school systems are likely to feel both strategies are necessary. But the former strategy clearly implies an image of the principal as middle manager in a non-professional, hierarchical organization. The latter strategy places more emphasis on the principal as school leader in a relatively flat professional organization. There is a choice to be made at least in emphasis, between images of the principalship when designing policy implementation strategies.

BEST COPY AVAILABLE

NOTES

1. See, for example, Wolcott (1978), Morris, et al (1981), Martin & Willower (1981), and Valentine, et al (1981) for research on this question ranging widely in methods used.
2. See, for example Keefe, et al (1983), Blumberg & Greenfield (1980), Dwyer, et al (1983).
3. Hall, et al (1982).
4. Leithwood & Montgomery (1984a).
5. These studies are identified and reviewed in more detail in Leithwood & Montgomery (Chapter 1), in press.
6. For example, Dwyer (1984).
7. Leithwood & Montgomery (Chapters 11 and 12), in press.
8. This framework is briefly described in Leithwood & Robinson (1979) and Leithwood & Montgomery (1982) and in a somewhat more expanded form in Leithwood (1982).
9. Extensive descriptions of each pattern of behavior appear in The Principal Profile. Evidence supporting the relative effectiveness of these patterns is reported in Leithwood & Montgomery (1984b).
10. These studies have been reported in more detail in Leithwood & Montgomery (1984).
11. Detailed review procedures and results have been reported in Leithwood & Montgomery (1982).
12. Trider (1985).

13. Studies contributing factors to this sub-category included Aslin & DeArman (1976), Porter (1980), Charters & Pellegrin (1972), Reynolds (1974), Berman & McLaughlin (1978), Parish & Arends (1983), Leithwood & Montgomery (1982).

14. Studies identifying factors in this sub-category were Berman & McLaughlin (1978), Porter (1980), Aslin & DeArman (1976), Hall, Rutherford & Griffin (1982), and Reynolds (1974).

15. See Aslin & DeArman (1976), Charters & Pellegrin (1972), Baldridge & Burnham (1975), Leithwood & Montgomery (1982).

16. See Charters & Pellegrin (1972), Baldridge & Burnham (1975).

17. See Aslin & DeArman (1976), Baldridge & Burnham (1974), Berman & McLaughlin (1978), Hall, Rutherford & Griffin (1982), Hughes (1968), Henderson (1975), Miskel (1977).

18. See Parish & Arends (1983), Charters & Pellegrin (1972), Stephens (1974), Kunz & Hoy (1976), Porter (1980), Clear & Seager (1971), Aslin & DeArman (1976), Berman & McLaughlin (1978), Reynolds (1974), Leithwood & Montgomery (1983b).

19. See Hall, Rutherford & Griffin (1982), Reynolds (1974), Rutherford, Hall & Newlove (N.D.), Charters & Pellegrin (1972), Leithwood & Montgomery (1982b)

20. Questionnaire respondents had the option of remaining anonymous or, by signing their name to their questionnaire, volunteering for a follow-up interview. Most principals signed their name.

21. This issue has been reviewed recently in Frederiksen, Review of Educational Research.

References

Aslin, N. & DeArman, J. (1976). Adoption and abandonment of innovative practices in high schools. Educational Leadership, 33 (8), 601-606.

Baldridge, J. & Burnham, R. (1975). Organizational innovation: Individual, organizational, and environmental impacts. Administrative Science Quarterly, 20, 165-176.

Berman, P. & McLaughlin, W. (1978). Federal-programs supporting educational change, Vol. VIII. Implementating and sustaining innovations. Santa Monica, Calif.: Rand Corporation.

Blumberg, A., & Greenfiled, W. (1980). The effective principal. Boston: Allyn & Bacon.

Charters, W. Jr., & Pellegrin, R. (1972). Barriers to the innovation process: Four case studies of differentiated staffing, Educational Administration Quarterly, 9 (4), 3-14.

Clear, D. & Seager, R. (1971). The legitimacy of administrative influence as perceived by selected groups. Educational Administration Quarterly, VII, (1), 46-63.

deCharms, R. (1977). Pawn or origin? Enhancing motivation in disaffected youth. Educational Leadership, 34 (6), 444-448.

Dwyer, C. C. (1984). Forging successful schools: Realistic expectations for principals, San Francisco: Far West Laboratory for Educational Research and Development,

Dwyer, D. C., Lee, G. V., Rowan, B., Bossert, St. T. (1983). Five Principals In Action: Perspectives On Instructional Management, San Francisco: Far West Laboratory For Educational Research & Development, March.

Fredericksen, N., (1984). Implications of cognitive theory for instruction in problem solving, Review of Educational Research, 54, 3, 363-407.

Hall, G., Rutherford, W., & Griffin, T. (1982). Three change facilitator styles: Some indicators and a proposed framework. Paper presented at the annual meeting of the American Educational Research Association.

Henderson, L. I. (1975). Organizational structure and the adoption of educational innovations. Unpublished doctoral dissertation, University of Toronto, Toronto.

Hughes, L. (1968). "Organizational climate" - Another dimension to the process of innovation. Educational Administration Quarterly, IV (3), 17-28.

Keefe, J. W., Clark, D. C., Nickerson, N. C. Jr., Valentine, J., (1981). The Middle Level Principalship, Volume I: A Survey of Middle Level Principals and Programs. Reston, Virginia: The National Association of Secondary School Principals.

Kunz, D. & Hoy, W. (1976). Leadership style of principals and the professional zone of acceptance of teachers. Educational Administration Quarterly, 12, (3).

Larkin, J., McDermott, J., Simon, D., Simon, H., (1980). Expert and novice performance in solving physics problems, Science, 208,1335-1342.

Leithwood, K. A. (Ed) (1982). Studies in curriculum decision-making. Toronto: Ontario Institute for Studies in Education Press.

Leithwood, K. & Anderson, S. E. (1983). Evaluating policy implementation. Unpublished manuscript, The Ontario Institute for Studies in Education, Toronto.

Leithwood, K. A. & Montgomery, D. J. (1982a). A framework for planned educational change: Application to the assessment of program implementation. Educational Evaluation and Policy Analysis, 4(2), 157-167.

Leithwood, K. A. & Montgomery, D. J. (1982b). The role of the elementary school principal in program improvement. Review of Educational Research, 52(3), 309-339.

Leithwood, K. A. & Montgomery, D. J. (1984a). The principal profile. Unpublished manuscript, The Ontario Institute for Studies in Education, Toronto.

Leithwood, K. A. & Montgomery, D. J. (1984b, June). Methods used in developing and validating a profile of growth in principal effectiveness. Paper presented to the annual meeting of the Canadian Society for Studies in Education. Guelph, Ontario.

Leithwood, K. A. & Montgomery, D. J. (1984). Obstacles preventing growth in principal effectiveness, Education, Urban Society, 17, 1, 73-88.

Leithwood, K. A. & Montgomery, D. J. (In Press). Improving Principal Effectiveness, Toronto: The Ontario Institute for Studies in Education Press.

Leithwood, K. A. & Montgomery, D. J. (1984). A longitudinal study of the implementation of Bill 82. Unpublished manuscript, The Ontario Institute for Studies in Education, Toronto.

Leithwood, K. A. & Robinson, F. G. (1979). A framework for planned educational change. Informal publication for the Curriculum Department, The Ontario Institute for Studies In Education.

Miskel, C. (1977). Principals perceived effectiveness, innovation effort, and the school situation. Educational Administration Quarterly, XIII (1), 31-46.

Morris, V. C., Crowson, R. & Porter-Gehrie, C. (1981). The urban principal: Discretionary decision-making in a large educational organization. Chicago: University of Chicago.

Parish, R. & Arends, R. (1983). Why innovative programs are discontinued. Educational Leadership, 40(4), 62-65.

Porter, P. (1980). Policy perspectives on the study of educational innovations. Educational Evaluation and Policy Analysis, 2 (4), 73-84.

Reynolds, L. (1974). Reducing the unanticipated consequences of change. Administrators Notebook, XXII (4).

Rutherford, W., Hall, G. & Newlove, B. (N.D.). Concerns principals have about facilitating change and their implications for training. Unpublished paper.

SPSS Inc. (1983). SPSS^{x} Users Guide. New York: McGraw-Hill.

Stephens, T. (1974). Innovative teaching practices: their relation to system norms and rewards. Educational Administration Quarterly, X (1), 35-43.

Trider, D. M. A. (1985). Factors influencing the policy implementation behavior of principals. Unpublished doctoral thesis, The Ontario Institute for Studies in Education, Toronto.

Valentine, J., Clark, D. C., Nickerson, N. C. Jr., Keefe, J. W. (1981) The middle level principalship, Volume 1: A survey of middle level principals and programs. Reston, Virginia: The National Association of Secondary School Principals.

Wolcott, H. F. (1978). The man in the principal's office. New York: Holt, Rinehart & Winston.